

parameters. As an initial effort, however, we plan that the analysis be limited to quantifying uncertainty in engineering cost inputs and then assessing the impact of that uncertainty on the aggregate cost estimates.

1. **Emissions and Air Quality Modeling.** These two components of the analytic chain have likely represented a large source of unquantified uncertainty in past benefits estimates. Treating them as separate elements for the purposes of quantifying uncertainty, however, runs the risk that the resulting quantitative characterizations cannot be integrated without a very large commitment of time and resources. An alternative approach is being developed that will involve EPA experts working together to identify the major sources of uncertainty in these areas, and then working with a combination of off-line tools and formal and informal elicitation processes to develop a representation of uncertainty in emissions and, perhaps, key air chemistry calculations that can be used in downstream analyses.
2. **PM Mortality Concentration-Response.** This area has been a major concern of health impact analysts, both within and outside of EPA. The plan for this area includes an aggressively scheduled pilot project that involves a rigorously planned and executed expert elicitation. The main focus is to provide a broader representation of uncertainty surrounding the existence and magnitude of the relationship between acute and chronic exposure to PM and premature mortality, especially for use in national level health impact and economic benefits assessments. [For the second 812 prospective study, we also will address the uncertainty associated with our understanding of the latency of PM-mortality effects as well as longevity for populations with PM-induced chronic illness. We have not yet defined our plan for looking at these aspects of the concentration-response function.](#)
3. **Ozone Mortality C-R Function.** In addition, we are considering a second project that would explore the ozone-mortality concentration-response literature. Specifically, it is intended to address uncertainties in the developing literature concerning the impact of short-term (daily or over a few days) fluctuations in ambient ozone concentrations on mortality rates. Of particular concern is the existence of this effect independent of the effect of short-term PM_{2.5} exposures.
4. **Mortality Valuation.** There are several existing analyses of the uncertainty in mortality valuation, including the empirical Bayes analysis of roughly 60 high-quality studies [that is included in its pre-publication draft form as Appendix I of this document](#). Those analyses focus on measurement of uncertainty in the base VSL value and do not address key benefits transfer considerations for applying existing VSL estimates to the benefits of air quality improvements. The purpose of the pilot in this area is to integrate the results of the existing work with a representation of the “context” uncertainty. Ultimately, the goals of longer-term efforts over the course of the Second Prospective will be both to provide better information on how to appropriately integrate information from wage-risk and contingent valuation studies, and to value alternative outcomes from the PM Mortality C-R Pilot as necessary.

In the remainder of this section, we describe our plans for each of the efforts in more detail.

[continue on 9-8 – May 12 original]